# Mathematics Department Subject Listing (2020-21)

*Here is the listing of classes to be offered in the Fall and Spring terms of the 2020-21 academic year.*

| ***Number*** | ***Name*** | ***fall*** | ***spring*** |
|---|---|---|---|
| 18.01 | Calculus | Guth | ???? |
| 18.01A | Calculus | Jerison | |
| 18.02 | Calculus | Dyatlov | Minicozzi |
| 18.02A | Calculus | Bush | [merge into 18.02] |
| 18.022 | Calculus | Staffilani | |
| 18.03 | Differential Equations | Collins | Lawrie |
| 18.031 | System Functions and the Laplace Transform *[IAP only]* | | Burns *[IAP]* |
| 18.032 | Differential Equations | | Ozuch-Meersseman |
| 18.04 | Complex Variables with Applications | | Y. Wang |
| 18.05 | Introduction to Probability and Statistics | | Orloff |
| 18.06 | Linear Algebra | Mossel | Negut |
| 18.062J | Mathematics for Computer Science | Leighton + Abel | EECS |
| 18.065 | Matrix Methods in Data Analysis, Sig Proc, Machine Learn | | Strang |
| 18.075 | Methods for Scientists and Engineers | | Cheng |
| 18.085 | Computational Science and Engineering I | Demanet | Lu |
| 18.100A | Real Analysis | Rodriguez | Yu |
| 18.100B | Real Analysis | Colding | Hung |
| 18.100P | Real Analysis | | Landon |
| 18.100Q | Real Analysis | Yiming Zhao | |
| 18.101 | Analysis and Manifolds | Melrose | |
| 18.102 | Introduction to Functional Analysis | | Rodriguez |
| 18.103 | Fourier Analysis: Theory & Applications | Lawrie | |
| 18.104 | Seminar in Analysis | | Staffilani |
| 18.112 | Functions of a Complex Variable | Borodin | |
| 18.125 | Measure Theory and Analysis | | Stroock |
| 18.152 | Intro to Partial Differential Equations | | Jerison |
| 18.155 | Differential Analysis I | Mrowka | |
| 18.156 | Differential Analysis II | | Guth |
| 18.157 | Introduction to Microlocal Analysis | | Hintz |
| 18.158 | Topics in Differential Equations | | Melrose |
| 18.200 | Principles of Discrete Applied Mathematics | | Goemans + Cifuentes |
| 18.200A | Principles of Discrete Applied Mathematics | Cifuentes | |
| 18.204 | Undergraduate Seminar in Discrete Math | Dhara + Gadish | Dhara + Gaudio |
| 18.211 | Combinatorial Analysis | Jiang | |
| 18.212 | Algebraic Combinatorics | | Postnikov |
| 18.217 | Combinatorial Theory | Postnikov | |
| 18.218 | Topics in Combinatorics | | Minzer |
| 18.226 | Probabilistic Methods in Combinatorics *[new]* | Yufei Zhao | |
| 18.300 | Principles of Continuum Applied Mathematics | | Durey |
| 18.303 | Linear PDEs: Analysis and Numerics | | Heinonen |
| 18.305 | Advanced Analytic Methods in Science & Eng | Cheng | |

| | | | |
|---|---|---|---|
| 18.306 | Advanced PDE's w/ Applications | | Rosales |
| 18.330 | Introduction to Numerical Analysis | | Sanders |
| 18.335J | Introduction to Numerical Methods | | Johnson |
| 18.336J | Fast Methods for Partial Diffl and Integral Eqns | Burns | |
| 18.337J | Parallel Computing and Scientific Machine Learning | Rackauckas | |
| 18.338 | Eigenvalues of Random Matrices | Edelman | |
| 18.352J | Nonlinear Dynamics: The Natural Environment | | *[cancelled]* |
| 18.353J | Nonlinear Dynamics: Chaos | Durey | |
| 18.354J | Nonlinear Dynamics: Continuum Systems | | Kodio |
| 18.357 | Interfacial Phenomena | | Bush |
| 18.367 | Waves and Imaging | | Demanet |
| 18.376J | Wave Propagation | | ?? Akylas(2) ?? |
| 18.384 | Undergraduate Seminar in Physical Math | Kodio | |
| 18.385J | Nonlinear Dynamics and Chaos | Rosales | |
| 18.400J | Automata, Computability, and Complexity | | EECS |
| 18.404J | Theory of Computation | Sipser | |
| 18.408 | Topics in Theoretical Computer Science | | Moitra |
| 18.410J | Design and Analysis of Algorithms | Karchmer(6) | EECS |
| 18.415J | Advanced Algorithms | EECS | |
| 18.416J | Randomized Algorithms | | EECS |
| 18.418 | Topics in Computational Molecular Biology | | Berger |
| 18.424 | Seminar in Information Theory | | Shor |
| 18.425J | Cryptography and Cryptanalysis | EECS | |
| 18.434 | Seminar in Theoretical Computer Science | Gaudio | |
| 18.435J | Quantum Computation | Shor | |
| 18.436J | Quantum Information Science | | ?? Chuang(6) ?? |
| 18.437J | Distributed Algorithms | Lynch(6) | |
| 18.453 | Combinatorial Optimization | | Franks |
| 18.456J | Algebraic Techniques and Semidefinite Optimization | | Parrilo |
| 18.504 | Seminar in Logic | Cohn | |
| 18.600 | Probability and Random Variables | Kelner | Sheffield |
| 18.615 | Introduction to Stochastic Processes | | Kempthorne |
| 18.642 | Topics in Math with Applications in Finance | Kempthorne | |
| 18.650 | Fundamentals of Statistics | Rigollet | Maunu |
| 18.655 | Mathematical Statistics | Maunu | |
| 18.656 | Mathematical Statistics: A Non-Asymptotic Approach | | Rigollet |
| 18.675 | Theory of Probability | Y. Wang | |
| 18.676 | Stochastic Calculus | | Sun |
| 18.677 | Topics in Stochastic Processes | | Borodin |
| 18.700 | Linear Algebra | Kac | |
| 18.701 | Algebra I | Poonen | |
| 18.702 | Algebra II | | Artin |
| 18.703 | Modern Algebra | | Kac |
| 18.704 | Seminar in Algebra | Chan | J. Wang |
| 18.705 | Commutative Algebra | Bezrukavnikov | |
| 18.706 | Noncommutative Algebra | Yun | |
| 18.715 | Introduction to Representation Theory | Lusztig | |

| | | | |
|---|---|---|---|
| 18.725 | Algebraic Geometry I | Maulik | |
| 18.726 | Algebraic Geometry II | | Maulik |
| 18.737 | Algebraic Groups | | Poonen |
| 18.745 | Lie Groups and Lie Algebras I | Etingof | |
| 18.748 | Topics in Lie Theory | Kim | |
| 18.755 | Lie Groups and Lie Algebras II | | Etingof |
| 18.781 | Theory of Numbers | | Kim |
| 18.782 | Introduction to Arithmetic Geometry | Roe | |
| 18.783 | Elliptic Curves | | Sutherland |
| 18.784 | Seminar in Number Theory | Kriz | |
| 18.785 | Number Theory I | Zhang | |
| 18.786 | Number Theory II | | Zhang |
| 18.821 | Project Laboratory in Mathematics | Negut | Yun |
| 18.900 | Geometry and Topology in the Plane | Seidel | |
| 18.901 | Introduction to Topology | Dai | Lusztig |
| 18.904 | Seminar in Topology | | Piccirillo |
| 18.905 | Algebraic Topology I | Hahn | |
| 18.906 | Algebraic Topology II | | Seidel |
| 18.919 | Graduate Topology Seminar | Miller | |
| 18.937 | Topics in Geometric Topology | | Mrowka |
| 18.950 | Differential Geometry | | Collins |
| 18.952 | Theory of Differential Forms | | Guillemin |
| 18.965 | Geometry of Manifolds I | Minicozzi | |
| 18.966 | Geometry of Manifolds II | | Colding |
| 18.994 | Seminar in Geometry | *[cancelled]* | |
| 18.S096 | Special Subject: Linear Algebra and Optimization | Moitra + Parrilo | Cohn |
| 18.S190 | Special Subject: Introduction to Computational Science and Engineering | Demanet + Darmofal(16) | *[again?]* |
| 18.S191 | Special Subject: Introduction to Computational Thinking for Real-World Problems | Edelman + Sanders | |
| 18.S996 | Special Subject: Topics in Quantum Computation | Harrow(8) | |
| 18.A03 | First-Year Seminar: Knot Theory | Mrowka | |
| 18.A06 | First-Year Seminar: What is a Number? | Miller | |
| 18.A34 | First-Year Seminar: Mathematical Problem Solving | Yufei Zhao | |

*note: numbers in parentheses following names indicate department, if not Mathematics*